

WHAT IS CLAIMED IS:

1. A lithium polymer battery cell comprising:
a first electrode having at least one first electrode layer adjacent a first
current collector;
a second electrode of opposite charge from the first electrode and having
5 at least one second electrode layer adjacent a second current collector; and
a separator layer positioned between the first and second electrodes,
wherein one of the first and second current collectors is a metal grid and
the other of the first and second current collectors is a metal foil.
2. The battery cell of claim 1 wherein the cell is a folded multicell in which
the first electrode is configured continuously at the exterior of the multicell and the first
current collector is the metal grid, and the second electrode is configured
discontinuously at the interior of the multicell and the current collector is the metal foil.
3. The battery cell of claim 1 wherein the cell is a bicell comprising the
second electrode sandwiched between a pair of first electrodes, with a pair of separator
layers, one positioned between the second electrode and each of the pair of first
electrodes.
4. The battery cell of claim 3 wherein second current collector is the metal
foil and the first current collector in each of the pair of first electrodes is the metal grid.
5. The battery cell of claim 4 wherein the cell is a folded multibicell.

6. The battery cell of claim 4 wherein the pair of first electrodes is a pair of cathodes and the first current collector is an aluminum grid.
7. The battery cell of claim 4 wherein the second electrode is an anode and the second current collector is a copper foil.
8. The battery cell of claim 4 wherein the pair of first electrodes is a pair of anodes and the first current collector is a copper grid.
9. The battery cell of claim 4 wherein the second electrode is a cathode and the second current collector is an aluminum foil.
10. The battery cell of claim 3 wherein the second electrode comprises the second current collector sandwiched between a pair of second electrode layers, and wherein each of the pair of first electrodes comprises the first current collector positioned at the exterior of the bicell.
11. The battery cell of claim 3 wherein the second electrode comprises the second current collector sandwiched between a pair of second electrode layers, and wherein each of the pair of first electrodes comprises the first current collector sandwiched between a pair of first electrode layers.
12. The battery cell of claim 1 wherein first electrode comprises the first current collector sandwiched between a pair of first electrode layers.

13. The battery cell of claim 1 wherein the second electrode comprises the second current collector sandwiched between a pair of second electrode layers.

14. The battery cell of claim 1 wherein the first electrode comprises the first current collector positioned at the exterior of the battery cell.

15. The battery cell of claim 14 wherein the second electrode comprises the second current collector positioned at the exterior of the battery cell.

16. A lithium polymer battery bicell comprising:
a pair of anodes, each comprising a copper grid current collector adjacent at least one anode layer;

a cathode sandwiched between the pair of anodes and comprising an
5 aluminum foil current collector sandwiched between a pair of cathode layers; and
a pair of separator layers, each positioned between the cathode and one of the pair of anodes.

17. The battery bicell of claim 16 wherein the pair of anodes each comprise a single anode layer and the current collector is positioned at the exterior of the battery cell.

18. The battery bicell of claim 16 wherein the pair of anodes each comprise the current collector sandwiched between a pair of anode layers.

19. The battery bicell of claim 16 wherein the pair of anodes are configured discontinuously and the bicell is in a folded configuration to form a corrugated multibicell.
20. A lithium polymer battery bicell comprising:
a pair of cathodes, each comprising an aluminum grid current collector adjacent at least one cathode layer;
an anode sandwiched between the pair of cathodes and comprising a copper foil current collector sandwiched between a pair of anode layers; and
5 a pair of separator layers, each positioned between the anode and one of the pair of cathodes.
21. The battery bicell of claim 20 wherein the pair of cathodes each comprise a single cathode layer and the current collector is positioned at the exterior of the battery cell.
22. The battery bicell of claim 20 wherein the pair of cathodes each comprise the current collector sandwiched between a pair of cathode layers.
23. The battery bicell of claim 20 wherein the pair of cathodes are configured discontinuously and the bicell is in a folded configuration to form a corrugated multibicell.